

THE BELL SYSTEM CODE
FOR ENVIRONMENTAL PROTECTION

CONTENTS	PAGE
1. INTRODUCTION	1
2. RIGHTS-OF-WAY	2
2.01 General	2
2.02 Selection of Rights-of-Way	2
3. BUILDINGS AND TOWERS	3
3.01 General	3
3.02 Site Selection	3
3.03 Design	3
4. CONSTRUCTION OPERATIONS	4
4.01 General	4
4.02 Clearing Activities	5
4.03 Cleanup and Restoration	5
5. MAINTENANCE ACTIVITIES	6
5.01 General	6
6. MOTOR VEHICLES	6
6.01 Operation and Maintenance	6

1. INTRODUCTION

1.01 In recent years, need for protection of the environment has become more and more evident. We cannot be complacent. All of us must be concerned.

1.02 America is experiencing what President Nixon has called an "environment awakening." In a message to Congress on February 8, 1972, President Nixon said this awakening "is ... leading to broad reforms in action, as individuals, corporations, government, and civic groups mobilize to conserve resources, to control pollution, to anticipate and prevent emerging environmental problems, to manage the land more wisely, and to preserve wilderness. Environmental concern must crystallize into permanent patterns of thought and action."

1.03 Bell System activities extend to all parts of the United States. We must continually build new plants to meet the growing needs for

communications services. And we must build, operate, and maintain that plant in a manner that will not impair the environment.

1.04 Some of the ways in which we could impair the environment, and which we must take measures to prevent, are:

- Excess use or misuse of land.
- Unpleasant appearance of buildings, towers and cable rights-of-way.
- Undisciplined construction activities.
- Wanton destruction of animal and plant life through the use of biocides and herbicides.
- Soil erosion along rights-of-way.
- Air pollution by motor vehicles, boilers and engines.
- Excess noise from construction work and running emergency engine generators.
- Improper disposal of refuse, sewage and cleaning materials.
- Use of water treatment chemical pollutants.

1.05 In considering environmental protection, we must always be aware of the quality and reliability of our service and its cost. We must build and operate our plant in a way that will minimize the possibility of interruptions and other service impairments. We must also watch costs. The public bears the cost for what we do, so it is in the public interest to carry out our construction and operating activities, including environmental protection, at reasonable cost.

1.06 Land is precious and the supply is limited. Therefore we must limit our use of land to the extent practical and properly use the land we must occupy.

1.07 *This Code for Environmental Protection* incorporates much of the Long Lines Code for Environmental Protection and is intended to cover measures to be taken to eliminate or, at least, minimize impairments resulting from the construction or operation of all Bell System cables, radio relay routes, waveguide systems, satellite facilities, buildings and motor vehicles.

2. RIGHTS-OF-WAY

2.01 General

One of the principal activities of the Bell System in the next decade will be the construction of cable and waveguide routes. These routes will generally be placed in rights-of-way obtained by easement from private property owners or, in the case of public land, by permission of government agencies. To obtain public acceptance of our continued need to build, we must do our work in a way that minimizes our use of land, avoids damage to the environment and protects the natural appearance and value of the areas we traverse. Emphasis must continue to be placed on the utilization of "out of sight" construction techniques. The specific points to be observed in the planning and coordination of cable routes outlined below, also apply to waveguide routes.

2.02 Selection of Rights-of-Way

Complete concealment of communication routes is virtually impossible, but much can be done to make them more attractive. Adherence to the following measures will minimize the impact on the environment:

- (a) Review proposed new rights-of-way with appropriate planning organizations and land managers in the initial layout phase. This will help provide for the best possible land use.
- (b) Keep the number of rights-of-way through a given cross-section to a minimum. Once reasonable diversity of cable routes has been achieved, construct new cables on previously established rights-of-way to the extent practical.
- (c) Where feasible, make use of joint utility corridors with other right-of-way users.
- (d) In laying out new routes, assess various

locations carefully and select those that will both preserve the natural landscape and minimize conflict with present and planned uses of the land on which they are to be located. If possible use those areas that will restore themselves rapidly after construction is completed.

- (e) Avoid areas of wildlife concentrations such as nesting and breeding areas.
- (f) Avoid parks, monuments, scenic, recreation or historic areas. If a right-of-way must be located in or near these areas, place it where it will be least visible to the public.
- (g) Locate right-of-way boundaries so as to avoid creating unusable hiatus areas between adjacent rights-of-way.
- (h) Locate rights-of-way so as to provide a natural cover or screen from highways and other areas of public view to the extent possible, using existing vegetation and terrain.

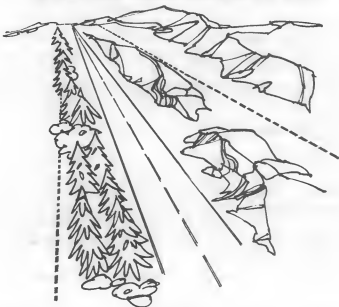


Figure 1. Locate rights-of-way to use natural cover.

- (i) Avoid long views of rights-of-way which must be cut through wooded areas. It may be desirable occasionally to deflect right-of-way strips when they pass through scenic forest or timber areas. The resulting irregular patterns prevent the right-of-way from appearing as a tunnel cut through the timber.



Figure 2. Deflect right-of-way strips.

- (j) Approach a highway diagonally in order to avoid long views of the right-of-way. Use a screen of natural vegetation in appropriate areas.

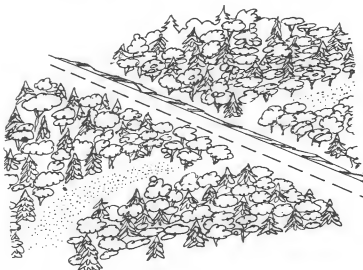


Figure 3. Leave a screen of natural vegetation when crossing highways and rivers.

- (k) Locate access roads for construction and maintenance in a manner that will preserve a natural appearance and minimize erosion.

- (l) Locate route marking signs, posts, etc., so that they are as inconspicuous as possible without loss of their primary purpose.

3. BUILDINGS AND TOWERS

3.01 General

This section pertains to all Bell System designed and constructed buildings and structures. These cover a wide range of sizes and functions — large, often multi-story structures used for administration offices and major switching and terminal centers; medium size structures for operating centers, customer service operations, maintenance and repair garages, and warehouses; and small, yet frequently visible, exchange buildings, employment offices and rural field operating centers. Each of the communities, large or small, into which each of these entities must blend is sensitive to the environmental impact new facilities will have. Our objective is to present ourselves as a prudent, good neighbor who is concerned with enhancing our surroundings. Accordingly, our buildings should be compatible with their environment and project the best image of our business. The effective location of our buildings and towers requires careful consideration of siting, analysis of basic functional requirements and provision for utilities, traffic patterns, and effects of future construction.

3.02 Site Selection

Select sites which:

- Will fulfill our needs yet will not conflict with planned land usage.
- Give consideration to the preservation of public views of scenic, historical, natural and recreation areas, parks and monuments.
- Reduce the necessity for clearing trees and vegetation for the building site and access roads to the minimum area required.
- Permit locating radio relay buildings on the slopes or brow of a hill as required to provide the necessary beam path, yet offer the minimum silhouette.

3.03 Design

- Coordinate layout and design parameters

with appropriate planning agencies to assure compatibility between the facilities and present and future land use requirements.

(b) Use appropriate architectural design, materials and colors to enhance the appearance of the basic structure and maintain its harmony with the surrounding area.

(c) Consider the use of prefabricated materials to minimize the need for erection methods which cause high noise levels.

(d) Plan the building for possible future additions compatible with original design concept.

(e) Provide attractive architectural treatment of maintenance, garage and storage facilities consistent with the main structure.

(f) Lay out roads and parking areas to offer minimum adverse impact on land value, appearance and the environment.

(g) Provide adequate but unobtrusive security and safety lighting systems for yards, parking areas and buildings. In some cases, low level exterior lighting will add to the aesthetic values of the building as well as the landscape.

(h) Specify emergency generators and heating units that comply with pollution control regulations. Provide electric or gas heaters where feasible.

(i) Consider noise from emergency engines and its affect on the surroundings where the locations for buildings are being determined. Areas where sound will not be resonated are the most desirable.

(j) Place power distribution, telephone and other service facilities underground when economically feasible, particularly in locations where underground distribution predominates.

(k) Use identification symbols and signs of a size and color compatible with the surroundings. When sign lighting is provided, assure that it is adequate and not offensive.

(l) Provide, or restore, landscaping that is

indigenous to the area, and that does not require more than routine maintenance.

4. CONSTRUCTION OPERATIONS

4.01 General

The best environmental planning can be defeated by uncontrolled work activities. The entire work force must be managed so that all operations are conducted in a manner that will preserve, enhance, and conserve natural resources. The following measures will help to attain this goal:

(a) Establish a general awareness of neighborhood conditions and require housekeeping of all personnel, including contractors.

(b) Take every precaution to prevent accidentally starting range or forest fires. Include fire prevention planning and a fire inspection program in all construction plans. Full compliance with fire laws and regulations is a necessity.

(c) Construction activities in the vicinity of streams and other bodies of water, including the temporary deflection of streams where necessary, should be performed in a manner which will not cause harm to fish and animal life or to the appearance of the area.

(d) Prevent damage to unremoved trees, natural features and topsoil.

(e) Where open burning is permitted, pile material in a manner and in such locations as will cause the least fire risk. Prevent fire or heat damage to desirable trees and shrubs. Conform with all local fire and pollution regulations. Do not provide incinerators for routine disposal of waste materials.

(f) Emphasize recycling.

(g) Clean up all litter daily.

(h) Avoid oil spills, disposal and other types of pollution, particularly while performing work in the vicinity of streams, lakes and reservoirs. Clean up accidental spills immediately.

- (i) Make waste disposal systems of a nature that does not pollute streams, air, or ground.
- (j) Plan for and provide construction offices, storage yards, etc., to accept delivery of material and equipment without disruption to other traffic in the neighborhood. Maintain the minimum amount of construction material on the site.

4.02 Clearing Activities

Clearing plans, methods and practices are extremely important in minimizing adverse effects on the environment. The following measures will help meet this goal if thoroughly implemented on each project:

- (a) Restrict clearing to minimum amount needed for proper cable construction and subsequent maintenance. To the extent possible, leave foliage undistributed for screening.
- (b) Perform clearing in a manner which will maximize the preservation of a natural appearance and the conservation of natural resources and will minimize marring and scarring of the landscape and the silting of streams.
- (c) Adjust the methods used in all clearing work, considering time of year and soil stability, to provide maximum preservation of natural vegetation and protection of adjacent resources, such as wildlife habitats.
- (d) Avoid sharply defined borders and straight swath appearances in clearing rights-of-way. Employ selective cutting to feather back the edges of rights-of-way and to provide an undulating boundary.
- (e) Use special care when clearing through areas with high exposure to public view, such as shelter belts, orchards, natural stands of trees, etc.
- (f) In heavy timber, consider making radio towers taller or topping the obstructing trees to avoid the complete removal of trees to provide a clear radio path. The trees then provide a partial screen for the towers and buildings.



Figure 4. Avoid complete removal of trees.

- (g) Make the best possible use of natural resources removed during clearing and site preparation activities.

4.03 Cleanup and Restoration

The following measures provide for the cleanup of work operation debris and the restoration of the area's natural setting:

- (a) Restore surrounding land and provide erosion control where required. Control site drainage and washout water to avoid erosion or contamination of streams and ponds as well as nearby property.
- (b) Construct terraces and other erosion control devices where necessary to prevent soil erosion along the right-of-way. Where possible, use material removed by excavation.
- (c) Dispose of heavy timber resulting from the clearing operation in accordance with local code requirements. Mechanically chip other vegetation not suitable for replanting and spread it in a manner that will aid seedling establishment and soil stabilization.
- (d) Dispose of soil excavated during construction either by spreading it evenly over the cleared area or by removing it from the site.
- (e) Treat scars, cuts, fills and other disturbed areas by restoring the natural contours and seeding as soon as practical to reduce erosion.

- (f) Provide a concave shape to the tops of soil piles on arid locations to retain moisture and prevent erosion.
- (g) Locate borrow areas away from public view. Restore these areas to such condition that erosion will be avoided and appearance is acceptable.
- (h) Use restoration procedures such as gravel beds, rocks, etc., where site factors make it unusually difficult to establish a protective cover of vegetation.
- (i) Plant trees and shrubs native to the area to provide the necessary screening where existing vegetation cannot be saved for this purpose. Choose vegetation of value as food and cover for wildlife.
- (j) Dismantle and remove all abandoned or temporary buildings, equipment, supplies, and personal property.

5. MAINTENANCE ACTIVITIES

5.01 General

In order to preserve the environment and natural resources, a thoughtful, comprehensive inspection and maintenance program for our property is imperative. Upkeep must be done to create and maintain a good appearance. The following measures will be incorporated into such a program:

- (a) Seed and fertilize when necessary to control soil erosion and maintain vegetation and natural appearance.
- (b) Use only approved chemicals for selective application in controlling vegetation. Where herbicides cannot be used, use mechanical means of control.

- (c) Maintain access roads to permit ingress in all types of weather without causing irreparable damage. Maintain water bars, proper slopes and drainage to prevent soil erosion.
- (d) Maintain right-of-way markers so that their appearance will not detract from the surrounding environment and will be as inconspicuous as possible without the loss of their primary purpose of route identification.
- (e) Maintain building equipment such as heating, air conditioning, plumbing, and emergency power as specified in existing practices. Monitor performance and comply with governmental standards for controlling noise, air and water pollution.
- (f) Use only paints having the least effect on plant or animal life for the maintenance of towers and the exteriors of buildings.

6. MOTOR VEHICLES

6.01 Operation and Maintenance

- (a) Inspect and service motor vehicles to insure minimum emissions at intervals specified by federal and state regulations, or more frequently if recommended by the manufacturer.
- (b) Use low-lead or no-lead gasoline in vehicles where it is feasible.
- (c) Review alternate power sources as applied to Bell System for feasibility, practicality, and economy.
- (d) Dispose of waste materials such as oil, tires, batteries, etc. in a manner to avoid damage to environment.
- (e) Operate ATVs, Line, Construction and other off road vehicles to keep damage to a minimum.